acid excreted; and there are many observations to show that in fevers it produces a decrement in temperature. Ranke and Kerner's experiments do not show, however, how far the lessening of tissue-waste is due to the direct action of quinia on oxidation, and how far to the indirect action of the alkaloid through the nervous system. Two methods have been employed for ascertaining the direct influence of quinia on oxidation. Harley added quinia to the blood, and found that this, when so treated, took up less oxygen and gave off less carbonic acid than blood which had not been so treated. This method is inconvenient of application, and liable to error. Zuntz employed the changes in the alkalinity of the blood for arriving at the same results. Schulte has extended these researches. If fresh blood be drawn, a development of acid begins in it, and continues, at first rapidly, then more slowly, till putrefaction sets in. Of course this acidification depends on oxidations; and the diminished alkalinity of the blood, thereby produced, furnishes a test of the rapidity with which oxidation proceeds. Schulte has confirmed the observation first made by Zuntz and Scharrenbroich, that quinia and berberine lessen the production of acid. Harley's observation is thus confirmed. Cinchonia produces similar results to quinia, though in a very inferior degree. Picrate of sodium is nearly as powerful as quinia. Zuntz found, as Ranke and Kerner had previously done, that quinia in ten-grain doses lessens the daily excretion of urea by one-third or more. Unruh has found the same to occur when quinia is administered in fevers; but his observations are open to objection. Binz's experiments are curious, and show, that, when putrefying liquids are injected into the circulation, the temperature of the body rises; but, if the fluids be previously mixed with quinia, whereby the putrefactive processes are arrested or destroyed, the rise in temperature is either entirely arrested or considerably diminished.

We think that these experiments have an important bearing on practice, and that they are in accordance with the teachings of clinical observation. It has been too much the fashion to assume that the therapeutical actions of quinia are entirely different from its effects when administered in health. We apprehend that the true method of commencing the study of the actions of medicines is first to ascertain their effects in health; then to observe their results in disease.

Dr. Crace Calvert has also recently announced the discovery of the power of quinia in preventing the development of fungi. He appears, however, to have been unaware of Binz's previous publication of the fact.—*Med. Times and Gazette*, Feb. 3, 1872.

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6. *Therapeutic Uses of Chloral.*—Dr. Oscar Liebreich, in the third edition of his treatise on hydrate of chloral, gives a general view of the classes of disease in which observation has allowed a general opinion to be formed as to the merits of the remedy. Numerous experiments in all countries have established the fact that chloral has the property of producing sleep in all pathological states where it is desirable to obtain this; and it does this without giving rise to any mischievous results. Some special peculiarities with regard to its action have, however, been observed. In a case of gout, for instance, a dose of hydrate of chloral produced excitement; but, when the patient had been treated with carbonate of soda for a week, the same dose acted as a hypnotic. This, according to Dr. Liebreich, was due to the circumstance that, at first, the formation of urate of soda deprived the blood of its normal amount of alkali, and thus prevented the transformation of the chloral into chloroform. On the other hand, and in accordance also with the theory of the transformation of chloral, it has been noticed that in typhus, where there is an excess of alkali in the blood, small doses of chloral readily produced sleep, while larger (even moderate) quantities gave rise to symptoms of poisoning. With regard to the use of chloral in operative surgery, the results of Dr. Liebreich's experiments have led him to expect with certainty that the drug may be used in such a way as to produce sufficient anæsthesia for even severe operations on the human subject. His observations of animals have shown him that there is a marked difference between a poisonous dose and the quantity sufficient to produce complete anæsthesia; and this meets the objection to chloral as compared with chloro-

form, that it is not introduced gradually into the system, but at once. Although experiments have shown that small doses of chloral have little influence on the circulation, Dr. Liebreich advises caution as to its use in heart-disease. In trismus and tetanus larger doses are indicated, as small quantities do not produce the necessary action on the spinal cord. Hydrate of chloral has been found to act beneficially in a number of cases of puerperal convulsions; and Dr. Liebreich is disposed to explain this by accepting Frerichs' theory, that the convulsive attacks are connected with the transformations of urea into urate of ammonia, and by supposing that, besides the production of chloroform, there is a formation of hydrochloric acid which neutralizes the ammonia. Among other diseases in which there has been a general agreement of opinion as to the beneficial effects of hydrate of chloral, Dr. Liebreich mentions senile insomnia, delirium tremens, nervous asthma, chorea, dental convulsions in children, sea-sickness, etc.—*Brit. Med. Journal*, March 2, 1872.

7. *The Calomel Vapour Bath*.—Mr. **Henry Lee** made a communication to the Medical Society of London (Jan. 29, 1872) on some cautions to be observed in the use of calomel vapour baths. He had introduced calomel baths to the notice of the profession; and before doing so he had laboured to find out the cause of failure of the cinnabar and gray oxide of mercury. Cinnabar was decomposed by heat, and gave off sulphurous acid, which irritated the lungs. The gray oxide was decomposed, and, absorbing oxygen, became the binoxide, and acted more powerfully. These remedies acted sometimes with small, sometimes with great, effect. Calomel, when used with water as he recommended, was, he thought, perfect; the skin was acted upon and the lungs were not irritated. The caution given to use water with the bath had been neglected in some quarters. During the fumigation with calomel, hydrochloric acid was given off, which was very irritating to the lungs; but no bad results followed if water were used. A young woman in good health and well nourished was suffering from a syphilitic ulcer of the throat. Twenty grains of calomel were volatilized in a teapot (without water) and inhaled. The skin suddenly became cold and livid, the lips blue, and the pulse small. The woman died, and at the necropsy the internal organs were found healthy, but the lungs were emphysematous, and there was effusion into them. A man inhaled thirty grains of calomel from a teapot for four nights for the cure of a hoarseness which had lasted two years, and had resisted a great variety of treatment. The hoarseness was cured without salivation, but the man had suffered ever since from a cough and pain in the chest. The lungs were not diseased, and no tubercle was present.—The President asked Mr. Lee if he had met with any untoward results after his treatment with the bath? What recommendation did he give to those about to use it?—Mr. Lee had not seen bad results except from pre-existing disease—old cases of mercurialization or disease of the bones. He did not salivate, but produced a slight tenderness of the gums. He used an apparatus of tin, with a tray for the calomel and a gutter for the water, a spirit-lamp to burn an ounce of spirit, half a drachm of calomel, a stool or chair, and a cloak. The calomel was sublimed and deposited on the skin. A little of the vapour was inhaled from time to time. The patient was ordered to sleep in the cloak. In four or five nights the gums were affected. In the case of one patient, two successive baths produced tender gums. Substances likely to produce diarrhœa were to be avoided.—*British Medical Journal*, February 24, 1872.

8. *Crystallized Digitaline*.—M. **Buignet**, in a report to the French Academy of Medicine, made January 23, on the essays sent for competition for the Orfila Prize, announces that the successful candidate (whose name is withheld until the time for the official declaration arrives) has made a discovery likely to be of very great utility in therapeutics and physiology. It is the production of crystallized "digitaline" in a state of absolute purity. The product has been submitted to a rigorous examination by the Prize Committee, and the superiority of the procedure adopted for the isolation of this active principle is admitted without hesitation. Splendid crystals resembling those of sulphate of quinia, and furnishing a bright emerald green when treated by hydrochloric